

## CLAIMS:

1. Sound reproducing system comprising headphones (11) with sound generating means (4, 5) and means to control (8, 9) the sound signal generated by said head phone sound generating means to simulate external sound sources ( $PL_1, PL_2, PL_3, PL_4$ ), characterized in that the headphones (11) are provided with microphones (6, 7), and the means to control comprise or are coupled to means to regulate (10) the sound production by the headphone sound generating means such that a signal ( $r_l(k), r_r(k)$ ) registered by the microphones is substantially zero when at least one external sound source ( $PL_1, PL_2$ ) is operative in response to a signal ( $x(k)$ ) and means (8,9) to record the results of said regulating to influence external source simulating sound generation in the headphones and /or the means to control comprise or are coupled to means (10) to regulate the sound production by the headphone sound generating means such that a comparison between a signal registered by the microphones ( $r'(k)$ ) and a known or calculated signal ( $r''(k), r'''(k), r''''(k)$ ) show said two signals to be substantially the same and means (8,9) to record the results of said regulation to influence external sound simulating sound generation in the headphones.

2. Sound reproducing system as claimed in claim 1, characterized in that it comprises means (10, I) to register regulation data ( $W_{XL}(k), W_{XR}(k)$ ) for a person. Sound reproducing system as claimed in claim 1, characterized in that the headphone is provided with a sound transporting means (12).

3. Sound reproducing system as claimed in claim 3, characterized in that the sound transporting means comprise a tube (12).

4. Sound reproducing system as claimed in claim 1, characterized in that the microphone (6) is integrated in a headphone insertable inside the ear.

5. Sound reproducing system as claimed in claim 1, characterized in that the headphone sound generating means is a microphone.

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